THE ROLE OF COMMUNICATION IN MODERN MEDICINE

*Address of the Retiring President**

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MY remarks on this occasion are concerned with one of the major problems in the broad field of modern medicine that the Academy is attacking, namely, communication.

With the opening next Tuesday evening of the Academy's first televised Correlated Clinical Science Course, we embark upon an experiment in medical communication that is a natural outgrowth not only of this Fellowship's historic role in bringing new information to the members of the profession, but of a tradition that is probably as old as medicine itself. For even the most ancient practitioners of the healing arts took pains to confer with each other on problems of common concern, to transmit their knowledge to future generations of doctors, and to record their clinical and research experiences. Furthermore, our predecessors availed themselves of every means of communication open to them, never shrinking from the new and experimental, and, indeed, often being among the first of the learned professions to pioneer in the use of promising forms and techniques.

Paleolithic cave-wall painting abounds with examples of illustrations of primitive surgical procedures such as trephining of the skull. When stone carving and clay relief were developed, the medical recorders were quick to see the advantages of these devices, both in providing for greater accessibility and permanence of medical information and in permitting of the three-dimensional representation of detail. Thus, from a period as early as the end of the Old Kingdom of Egypt about the 26th century B.C., there are numerous examples of medical illustration, such as the stele depicting four views of the court physician, Irj, engaged in diagnosis and treatment, and the relief from

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the necropolis of Sakkara showing the circumcision operation in progress.

Despite the unquestioned value of these visual arts, however, medical communication was necessarily and severely limited until the evolution of means whereby actual ideas, as expressed in speech, could be translated into symbols—that is, until the invention of written language. Indeed, it is highly doubtful that medicine, or, for that matter, any other field of human knowledge, could possibly have achieved its present heights of attainment without the written word. In one of its earliest forms, the pictograph impressed in clay, written language was employed by physicians from Assyria, Babylon, and other ancient lands, and cuneiform examples of such medical communication have survived the millenia. In a later form, the manuscript inscribed in ink upon papyrus, written language was most notably employed by Egyptian physicians. Surviving examples, such as the famous Ebers Papyrus which dates from about 1550 B.C. and the Academy's Edwin Smith Surgical papyrus which dates from about 1600 B.C., demonstrate not only the accomplishments of ancient medicine, but also the importance that was attached to medical communication for purposes of instruction, record-keeping, and interchange of ideas among members of the profession.

While certain improvements in manuscript techniques and materials, such as the utilization of parchment and the development of paper, served somewhat to facilitate medical communication, the next important contribution, and perhaps one as seminal as the development of written language itself, was the invention of printing with movable type by Johann Gutenberg in the middle of the 15th century. The effect of this great technological advance on the dissemination of all knowledge is so obvious that it need not be reiterated. Nevertheless, it is most significant that in any catalogue of incunabula, books devoted to various aspects of medicine are liberally represented. Indeed, what has recently been called the "publications explosion" in medicine, must be said to have started soon after Gutenberg, for by the 16th and 17th centuries, books and pamphlets dealing with health and disease were outnumbered only by similar publications in the fields of theology and politics.

In this country, too, physicians early found the need to communicate with each other. At first, they met with their colleagues and other

scientists in their vicinity for the exchange of information, or occasionally to hear a paper by a distinguished visitor imported at great expense and inconvenience. The first such group met in Boston in 1735. New York City and Philadelphia followed suit in 1749 and 1766, respectively. Very soon, however, physicians realized that while medical communication by direct personal contact was extremely useful and, indeed, for many purposes ideal, the printed word offered certain tremendous advantages. A published report could be widely circulated; it could be read, re-read, and studied at the convenience of the physician; it could serve as a permanent record to be stored in a library and referred to by future generations of doctors. And despite the utility for purposes of education and communication of the motion picture, radio, and most recently television, the printed word remains the most generally satisfactory, as well as the most satisfying medium for imparting and deriving information—a fact that can be attested to by those of us who have been forced to keep abreast of the news for the past few weeks without our daily newspapers.

While medical societies of several states issued their transactions in the eighteenth century, the first true medical journal in the United States began publication in 1797; this was the *Medical Repository*. Soon after the turn of the century, there started a spate of publications that continues to swell today, and that sometimes threatens to inundate the profession and to flood the mind of any physician who conscientiously attempts to keep up with the current literature. Indeed, it is a well-known fact that there is no science, or group of sciences, which has so many current periodicals as does medicine. *Biomedical Serials, 1950-1960, a Selective List of Serials, in the National Library of Medicine*, Washington, 1962, lists 8,909 titles of journals. In the area of medical journals, as in so many other fields, our own Academy played an early and important role; the first issue of the *Bulletin* was published in 1860, only 13 years after the Fellowship had been founded. Of course, the Academy had been issuing individual publications on a variety of subjects almost from its inception.

Medical pamphlets and books, too, began to appear early in the history of the profession in America. As early as 1677, Thomas Thacher published a broadside entitled, *A Brief Rule to Guide the Common People of New England How to Order Themselves and Theirs in the Small Pocks or Measels.* In our own city, the first medical pamphlet

was printed in 1731 by John Peter Zenger, who later acquired fame as an advocate of freedom of the press; the booklet was entitled, *An abstract of the Patent granted by His Majesty King George to Benj. Okell, the Inventor of a medicine, called Dr. Bateman's Pectoral Drops.* It appeared together with a *Short Treatise of the Virtues of Dr. Bateman's Pectoral Drops.* There is some dispute on the matter of the first formal medical textbook published in the United States, because it is difficult to arrive at a precise definition of what constitutes a textbook. Nevertheless, a strong contender for the honor is a book on surgery and military surgery written by John Jones, M.D., Professor of Surgery at King's College in New York, published in 1775; it was called *Plain Concise Practical Remarks on the Treatment of Wounds and Fractures; to which is added, a short Appendix on Camp and Military Hospitals principally designed for the Use of young Military Surgeons in North America.* It is quite obvious that while titles of early medical articles and books were no more concise than those of modern times they were, at least, more explicit.

The plethora of medical books and periodicals very soon presented problems that have not yet been completely solved—storage of material, accessibility of research resources, indexing of publications, and expeditious retrieval of information. The first and most obvious need was library facilities. The first medical library in this country was established in 1762 at the Pennsylvania Hospital. The first medical library in our city was founded in 1776 at The New York Hospital. These, however, were designed primarily to serve the needs of staff members and local physicians. The fulfillment of national needs and of the requirements of serious research and scholarship had to await the foundation of such vast repositories of medical literature as the National Library of Medicine at Bethesda, Maryland, and our own great Academy Library. The first of these, which is one of the largest medical libraries in the world and is eminent for its holdings of periodicals, was founded soon after the Civil War as the Library of the Surgeon General's Office. Until it took its present name recently, it was known as the Army Medical Library. Our own library, which is the second largest in the United States, was planned as one of the very first activities of our Fellowship. By 1875 it had grown sufficiently to warrant being allotted separate space in the first Academy building on West 31st Street.

But the mere storage of books and periodicals was not enough; they had to be indexed, so that the information they contained could be made readily available to those who needed it. In this area, too, American medicine made a contribution that is recognized the world over. The *Index-Catalogue of the Surgeon General's Office* is an indispensable bibliographic tool devoted to books and other nonperiodical literature. The new *Index Medicus*, which combines the old *Current List of Medical Literature* and the *Quarterly Cumulative Index Medicus*, successor to the *Index Medicus* founded in 1879, provides investigators in medicine with an instrument for searching the periodical literature unparalleled in any other science.

Despite these varied and excellent facilities, however, and despite the profession's historic interest in improving medical communication, the problems involved in keeping physicians informed about the scientific as well as the other aspects of modern medicine remain almost overwhelming. We are in an era of such rapid scientific and technological progress that new developments outrace any attempts to keep the profession informed of them. Furthermore, reports on discoveries and improvements are written in almost every language of the civilized world. Added to this is the astounding cost in money, space, and personnel that makes it well-nigh impossible for any single institution to maintain a complete medical library. Finally, there is the important matter of promoting better understanding between the profession and the public, while providing the optimum care and service for patients to which medicine has always been dedicated. An example of a promising contribution to this objective is the highly utilitarian medical passport of Claude Forkner in this present era of ever-increasing world travel. These problems sometimes stagger the most fertile imagination and challenge the keenest minds; nevertheless, they must be attacked if we are to continue our progress in the prevention and cure of disease and in the promotion of optimum health for all the people. For while patient care is the heart of medicine, research its mind, and education its soul, communication is both the nervous system that coordinates the entire body and the circulatory system that nourishes it.

Many bodies, agencies, and committees are attempting to solve some of the problems of medical communication. In true American tradition, these are sponsored by government at all levels, by founda-

tions, by educational institutions, by business, and by professional organizations such as our Fellowship. The National Library of Medicine, for example, is studying the feasibility of utilizing automated electronic equipment to retrieve medical information. A number of private foundations are supporting vast translation programs. Many business firms are contributing to the distribution of basic collections of microfilmed medical literature to libraries in this country and abroad. One of the medical colleges in this city has, for the last seven years, been conducting a unique program designed to improve the quality of medical writing and speaking of its students and faculty members. Local and national societies, as well as specialty organizations, are expanding their excellent provisions for the continuing education of the members of the profession. Nor has our own Fellowship been laggard in facing the problems of medical communication. On the contrary, the Academy has always been in the forefront in every aspect of this difficult area. From the day of its foundation in 1847, it has sponsored courses, conferences, and lecture series, frequently studying the social and economic, as well as the scientific problems that have always confronted medicine. In 1935, it started the famous "Lectures to the Laity", designed to keep the intelligent public informed concerning both the advances being made by the profession and the difficulties it faced.

Nor has the Academy hesitated to experiment with new ideas and techniques in communication. Many of its lectures have been broadcast by radio. It has sponsored and produced some excellent films for both professional and general use. It has participated in closed-circuit television programs for doctors and members of allied professions. It is the coordinating body of the newly established Medical Library Center of New York, housed in a building adjacent to our own—a project to which our Director, Dr. Howard Craig, has contributed immeasurably. And next week, it embarks upon a series of lectures which will be telecast on the new open circuit provided by New York City's recently established Ultra-High Frequency (UHF) station, Channel 31, under the supervision of the Committee on Medical Education and the immediate direction of Dr. Aims C. McGuinness. The present plan of the telecast Correlated Clinical Science Course contemplates 16 one-hour seminars to be broadcast between 9 P.M. and 10 P.M. on Tuesday evenings through April 30.

With only a slight and inexpensive modification of their present receivers, physicians living within a 25-mile radius of New York City will be able to see these programs. After April, 1964, all TV sets manufactured and sold in this country will be required to be equipped to receive UHF programs. If this experimental series is well received by the profession, broadcasts will be resumed on a regular basis in the fall, and probably expanded.

Whether or not the Academy's newest endeavor in medical communication succeeds, remains to be seen. In themselves, however, success and failure in a specific enterprise are unimportant. What *is* important is that medicine in general, and our Fellowship in particular, adhere to the historic traditions of our profession in continuing to search for the best possible methods, not only in the prevention and treatment of disease, not only in meeting the social and economic problems that the future certainly holds in store both for doctors and their patients, but in all other aspects of our chosen calling, including the education and training of more and better physicians, and the improvement of medical communication. It is the quest for the goal, not necessarily its attainment, that has kept medicine youthful, progressive, and vigorous throughout the ages.

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